Our Thanks to Herbert Laboratories

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We salute Herbert Laboratories for their contribution to the Endowment Fund and for their continued support of clinical and investigative dermatology.

D.A.N., Denver, CO

In This Issue . . .

Jean L. Marx

Good News — and Bad — About UVA-Induced Tans

One of the ironic outcomes of the growing use of high SPF sunblocks is an increased concern about the effects of ultraviolet A (UVA) radiation on the skin. Most commercial sunblocks protect against ultraviolet B (UVB) radiation, but not against the UVA type. People who use the products and stay out in the sun for prolonged periods may therefore be increasing their UVA exposures at the same time they are protecting themselves against the damage that UVB irradiation does to skin. Moreover, tanning parlors commonly use UVA radiation, because it is supposed to be "safer" than UVB.

UVA radiation can also damage the skin, however. In experiments described in this issue, Randall Margolis, Margaret Sherwood, Dan Maytum, Richard Granstein, John Parrish, and Richard Gange of Massachusetts General Hospital and Harvard University in Boston, and Martin Weinstock of the Veterans Administration Medical Center and Roger Williams General Hospital in Providence, Rhode Island, determined whether a UVA-induced tan can protect human skin against further UVA exposures. They report both good news and bad news. "We're saying that a little UVA tan will protect you against acute damage," Morgolis says, "but it also has aging effects."

When the researchers exposed untanned skin on the buttocks of human volunteers to UVA radiation and took biopsies 24 hours later, they found that the small blood vessels of the dermis were damaged and necrotic. In addition, numerous inflammatory cells had infiltrated the dermis. These signs of damage were less severe in skin that had already been tanned by a series of four exposures to UVA radiation, however. In particular, the blood vessels did not become necrotic in previously tanned skin after an acute UVA exposure. And the inflammatory cells, although still found, were present in reduced numbers.

"That all sounds good," Margolis remarks. "The downside of this is that we also noticed that tanning causes a chronic inflammatory damage." Some 7 days after the last UVA exposure the tanned skin still contained an infiltrate of mononuclear inflammatory cells. Such cells release cytokines that can alter the synthesis of collagen and other skin components, perhaps leading to the damage of photoaging. Since UVA irradiation causes both acute and chronic inflammatory changes, Margolis and his colleagues recommend that people who want to avoid photoaging should still minimize their UVA exposures.

Two Leukotrienes Are Potent Stimulators of Melanocyte Growth

In recent years, dermatologists have learned a great deal about what it takes to grow human melanocytes in culture. They have identified several agents that can stimulate the growth of the cultured pigment cells, but only two of these, basic fibroblast growth factor and alpha-melanocyte stimulating hormone, occur naturally in the skin. Neither the fibroblast growth factor nor the hormone will support the growth of cultured melanocytes by itself, however. One of the other growth-stimulating agents, none of which is a normal skin constituent, must also be added. All of this suggests that the skin contains additional substances that contribute to melanocyte growth.

In this issue, Joseph Morelli, Joseph Yohn, M. Bradley Lyons, Robert Murphy, and David Norris of the University of Colorado Medical School in Denver now report that they may have identified two of these substances. They have found that the leukotrienes C_4 and D_4 are potent stimulators of the growth of cultured melanocytes. The discovery may have implications for understanding the tanning induced by ultraviolet radiation and also the development of malignant melanomas.

Morelli and his colleagues decided to look at the leukotrienes' effects on melanocyte growth because the compounds are synthesized from arachidonic acid, a fatty acid found in higher than normal concentrations in inflammatory skin conditions such as sunburn and psoriasis. The researchers tested several leukotrienes and prosta-

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